Muhammad Haseeb Abid Awan

AI/ML Engineer

✉ m.haseebabidawan@gmail.com ☎ +923045662002 in LinkedIn ⃝ GitHub 💼 Portfolio

--- **Professional Summary**---

AI/ML Engineer with over 5 years of experience in Machine Learning (ML), Artificial Intelligence (AI), and Database Management. Expertise in developing LLMs, building RAG systems, and creating predictive models for time-series forecasting. Proficient in developing interactive dashboards for data visualization using Power BI. Strong background in database technologies, including Oracle and PostgreSQL, and frameworks such as Hugging Face and TensorFlow.

Work Experience

Centre of Advanced Research in Engineering

AI/ML Engineer   Jul 2023 - Present

- Fine-tuned time-series models (Transformer, N-BEATS, PyCaret, TFT), improving **accuracy by 80%** and visualized results by creating Dashboard using Power BI.
- Optimized model performance with Optuna for hyperparameter tuning, reducing error rates from **40% to below 20%** by implementing data preprocessing techniques such as scaling and managing missing values.
- **Enhanced chatbot accuracy** by integrating Retrieval-Augmented Generation (RAG) using Langchain and Lang Graph.
- Led the development and deployment of Generative AI LLM chatbots using frameworks like Hugging Face, Groq, and OLLAMA, ensuring high scalability and seamless performance.

Database Engineer   Nov 2022 – Jun 2023

- Implemented ETL processes and ensured **real-time synchronization** of multi-location systems using **Oracle Golden-Gate**, achieving **99.9% data availability**.
- Developed KPIs for ERP systems, improving **operational insights by 30%** and streamlining decision-making.
- Performed backups and recovery operations to safeguard data integrity.

Database Support Engineer   Jun 2022 – Oct 2022

- Provided technical support and optimized database performance using **ETL processes** and tuning techniques.
- Ensured **high availability** and minimal downtime across applications.

Capital University of Science and Technology

Database Administrator   Jan 2020 – Jun 2022

- Provided Oracle DB support and managed the university portal.
- Managed admissions, exams, and registration for 900+ students.
- Manage Outcome-Based Education (OBE) System for Eng Deps.

Education

MS Engineering Management
2021 – 2023   *CGPA: 4.00 / 4.00*
Capital University of Science and Technology, Islamabad

BS Electrical Engineering
2014 – 2018   *CGPA: 3.01 / 4.00*
Capital University of Science and Technology, Islamabad

Certifications

AI & Data Science: Foundation of Artificial Intelligence, Generative AI for Beginners - Great Learning

Data Analytics: Data Analytics and Business Intelligence - DigiSkills.pk, Google Data Analytics – Google, Excel Fundamentals for Data Analysis - Macquarie University, Introduction to Data Analysis using Microsoft Excel – Coursera.

Skills & Competencies

Languages: Python, SQL, C/C++
Technologies/Frameworks: Hugging Face, Groq, OLLAMA, Langchain, Lang Graph, Chroma-DB, Neo4j, PostgreSQL, Oracle, Oracle Goldengate, ERP, ETL, Linux, Phi-data
Machine Learning & Data Analysis: NumPy, Pandas, Scikit-learn, TensorFlow,`Kera's, Matplotlib, Seaborn, PyCaret, Darts, Transformer (TFT), EDA, Prompt Engineering
Model Optimization: Fine-Tuning, Optuna, Ray-Tune
Deep Learning & NLP: Llama, GPT, Mistral, Chatbots, RAG, Multimodal RAG, GEN-AI
Deployment Tools: Flask, Stream-lit, Power-BI, Tableau, MLOps

Projects

Retrieval-Augmented Generation (RAG): ⧉

Project Overview: Enhanced chatbot functionality by integrating multi-modal RAG with external knowledge sources, **improving query resolution time by 40%**. Used vector embeddings, Chroma-DB, Langchain, and Lang Graph for refined LLM context.

Timeseries Forecasting Models: ⧉

Project Overview: Implemented predictive models using Transformer, NBEATS, and TFT for time series forecasting, **reducing MAPE to below 20%**. Automated workflows with PyCaret and integrated results into Power BI for visualization. Conducted data preprocessing, optimized hyperparameters with Optuna, and improved model reliability through cross-validation.

Medical Diagnosis Chatbot using Multi-Modal LLM: ⧉

Project Overview: Created an AI-powered chatbot for medical image analysis, achieving **70% accuracy** in report generation and simplifying diagnoses. Integrated Google GEMINI and GROQ LLMs, implemented an "explain-in-easy-words" feature for non-experts, and deployed a user-friendly web interface using Stream-lit.

Multi-Modal AI Agent: ⧉

Finance AI Agent: Built using Phi-data and Groq to deliver actionable financial insights, improving analysis **efficiency by 25%.**
SQL AI Agent: Designed with Groq and Langchain for seamless database interaction, automating advanced DML and DDL tasks with **30% faster execution.**

LLM Chatbots Development: ⧉

Project Overview: Developed and deployed conversational AI chatbots using LLMs with Hugging Face, Groq, and OLLAMA, increasing **user engagement by 30%.** Used pre-trained models, optimized tokenization, and managed context length for seamless interactions.